

What is claimed is:

1. A separator element for separating liquid from a gas flow,
comprising:
a body portion consisting at least in part of filter media mountable
5 in a separator housing and having opposing upper and lower ends and a curved
side extending between the opposing ends, wherein the curved side rotates 360°
about a central axis of the body portion to form a curved surface of the body
portion.
2. The separator element of claim 1, wherein the curved side further
10 comprises one of a hyperbolically curved side, a circular arc curved side, and an
elliptically curved side.
3. The separator element of claim 1, wherein the curved side
comprises a hyperbolically curved side.
4. The separator element of claim 1, wherein the curved side
15 comprises a circular arc curved side.
5. The separator element of claim 1, wherein the curved side
comprises an elliptically curved side.
6. The separator element of claim 1, wherein one of the upper and
lower ends further comprises an inlet for receiving the gas flow from a
20 communicating inlet of the separator housing.
7. The separator element of claim 6, wherein the curved side is
adapted for in-out gas flow allowing the gas flow received via the inlet to exit
through the curved side to a communicating outlet of the separator housing.

8. The separator element of claim 1, wherein one of the upper and lower ends further comprises an outlet for allowing the gas flow to exit to a communicating outlet of the separator housing.

5 9. The separator element of claim 8, wherein the curved side is adapted for out-in gas flow for receiving the gas flow through the curved side from a communicating inlet of the separator housing.

10 10. The separator element of claim 1, wherein the body portion has a cross-sectional area perpendicular to its central axis that is greater at its lower end than at its upper end and decreases gradually at a gradually decreasing rate from its lower end to its upper end.

11. The separator element of claim 1, wherein the body portion has a cross-sectional area perpendicular to its central axis that is greater at its upper end than at its lower end and increases gradually at a gradually increasing rate from its upper end to its lower end.

15 12. The separator element as described in claim 11, which has a reduced wet band area and thus a reduced gas velocity across the element and an increased separation efficiency.

13. The separator element of claim 1, wherein the curved side is non-linear and comprises a combination of curves.

20 14. A separator system for separating liquid from a gas flow, comprising:

a plurality of separator elements, each having a body portion consisting at least in part of filter media mountable in a separator housing and having opposing upper and lower ends and a curved side extending between the opposing ends, wherein the curved side of each rotates 360° about a central axis of the body portion to form a curved surface of the body portion.

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15. The separator system of claim 14, wherein one of the upper and lower ends of each separator element further comprises an inlet for receiving the gas flow from a communicating inlet of the separator housing.

5 16. The separator system of claim 15, wherein the curved side of each separator element is adapted for in-out or out-in gas flow allowing the gas flow received via the inlet to exit through the curved side to a communicating outlet of the separator housing.

17. A separator system for separating liquid from a gas flow, comprising:
10 a separator housing having an inlet for receiving the gas flow and an outlet for allowing the gas flow to exit;

at least one separator element disposed within the separator housing having a body portion consisting at least in part of filter media and having opposing upper and lower ends and a curved side extending between the
15 opposing ends, wherein the curved side rotates 360° about a central axis of the body portion to form a curved surface of the body portion.

18. The separator system of claim 17, wherein the separator housing has opposing upper and lower ends, and the separator housing outlet is spaced between its upper and lower ends, and spaced away from the upper and lower
20 ends without throttling loss at an outlet port region.